Analytic Approaches:
The Role of Individual and Community Characteristics in Child Welfare Decisions

North Carolina Title IVE Waiver Demonstration
Evaluation Team
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Research Question

How do characteristics of the child, mother, local agency, and county influence child placement decisions when maltreatment has been substantiated?
Conceptual Framework

Serve in own home?  Place in out-of-home care?

Individual Characteristics  Decision  Community Characteristics

Child Mother  Agency County

Interaction of Individual and Community Characteristics
Analytic Method

Multi-level Cox Proportional hazards models to estimate the probability of placement considering multilevel independent variables.
Study Design


1993 Birth Cohort

1994 Birth Cohort

1995 Birth Cohort

1996 Birth Cohort

1997 Birth Cohort

* Years of multiple child welfare reform initiatives in North Carolina.
Building an Ecological Perspective

Model 1: Individual-level characteristics about children and mothers.

Model 2: Added community-level characteristics about the local child welfare agency and surrounding county.

Model 3: Individual and community-level characteristics as well as interaction effects.
Selected Interaction Effects in Model 3

<table>
<thead>
<tr>
<th></th>
<th>9</th>
<th>18</th>
<th>24</th>
<th>29</th>
<th>38</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age other</strong></td>
<td>0.96</td>
<td>0.91</td>
<td>0.89</td>
<td>0.86</td>
<td>0.83</td>
</tr>
<tr>
<td><strong>Age 0-30 days</strong></td>
<td>1.45</td>
<td>2.17</td>
<td>2.71</td>
<td>3.40</td>
<td>4.84</td>
</tr>
</tbody>
</table>
Selected Interaction Effects in Model 3

Agency Median Length of Stay in Care

<table>
<thead>
<tr>
<th></th>
<th>14</th>
<th>240</th>
<th>517</th>
<th>795</th>
<th>1202</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>1.01</td>
<td>1.13</td>
<td>1.29</td>
<td>1.48</td>
<td>1.81</td>
</tr>
<tr>
<td>Female</td>
<td>1.09</td>
<td>1.13</td>
<td>1.18</td>
<td>1.24</td>
<td>1.33</td>
</tr>
</tbody>
</table>
Selected Interaction Effects in Model 3

<table>
<thead>
<tr>
<th>Agency Percent of Case Manager Turnover</th>
<th>Hazard Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1.00</td>
</tr>
<tr>
<td>9</td>
<td>0.97</td>
</tr>
<tr>
<td>32</td>
<td>0.91</td>
</tr>
<tr>
<td>55</td>
<td>0.86</td>
</tr>
<tr>
<td>100</td>
<td>0.75</td>
</tr>
</tbody>
</table>

Race other: 1.00, 0.97, 0.91, 0.86, 0.75
Race Black: 0.52, 0.54, 0.61, 0.69, 0.87
Selected Interaction Effects in Model 3

Agency Proportion of Foster Care vs. CPS Case Management Cases

<table>
<thead>
<tr>
<th>Race</th>
<th>0.30</th>
<th>0.35</th>
<th>2.09</th>
<th>3.82</th>
<th>9.67</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race other</td>
<td>1.02</td>
<td>1.03</td>
<td>1.18</td>
<td>1.35</td>
<td>2.14</td>
</tr>
<tr>
<td>Race black</td>
<td>0.52</td>
<td>0.52</td>
<td>0.53</td>
<td>0.53</td>
<td>0.56</td>
</tr>
</tbody>
</table>
Selected Findings

1. For the most vulnerable children, agency staff make the decision to place a child in out-of-home care based on the individual circumstances of the child.

2. For other children, the education levels of agency staff, participation in reform, and use of foster homes for initial placements seem to make a difference in how adequacy of prenatal care, number of children, and marital status are associated with the decision to place a child.
Issues and Challenges to the Approach

• Building the datasets and specification of variables.
• Calculating HR at levels of the continuous variables.
• Testing all interaction possibilities.
• Logistic regression vs. survival analysis and censoring.
• Interpreting, discussing a large number of results.
• Terminology (i.e. hazard, hazard rate, probability, likelihood, risk, risk factor, characteristic, variable, decision, placement decision, placement in out-of-home care, etc.)